



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,898	03/04/2004	Kiyoe Ochiai	118936	6968
25944	7590	12/01/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			HIRUY, ELIAS	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,898

Applicant(s)

OCHIAI ET AL.

Examiner

Elias B. Hiruy

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13 is/are allowed.
- 6) ☒ Claim(s) 14, 15, 18, 19, 21-25, 28, 29 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 16, 17, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

- The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 21-23 and 31-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The applicant teaches how the power of the motor generator and the motor could be calculated and the sum of the two values could be determined to be greater than or equal to zero. Neither the specification nor the claims clearly show how the power generated by the motor could be negative and further the sum could be zero. It is well known in the art that the only condition that a motor could have a zero output is when the motor is turned off. Thus, it is found by the examiner that the teaching is not enabling to one having ordinary skill in the art. In addition, disconnecting the power

Art Unit: 2837

supply from the two neutral points as suggested in claim 7 and 10 will shut vehicle/the system completely. The examiner believes that the disclosure does not teach how the above-cited deficiencies could be overcome to enable the claims as claimed.

Claim Rejections - 35 USC § 103

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 14-15, 18-19, 24-25 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al (Pub No. US 2002/0105300 A1) in view of Kumar et al U.S. Patent No. (6,023,137).

Regarding claim 14 and 24, Moriya et al disclosure shows an apparatus that has a 2Y motor (22, figure 10). However, Moriya et al fails to show how the 2Y motor is coupled to an internal combustion engine and an electric motor coupled to drive wheels of the hybrid vehicle.

On the other hand, Kumar et al shows a motor that is coupled to an internal combustion engine and electric traction motors that are driving wheels of the hybrid vehicle (column 2 lines 52-67, and column 3 1-20).

Accordingly, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the internal combustion engine into Moriya et al. The motivation being that the method will eliminate additional hardware need to generate electric power and enables one to efficiently use both power sources.

Regarding claim 24, Moriya et al shows a microprocessor that contains a computer recordable recording medium (Rom/Ram) (54 and 56, figure 10) (page 3 paragraph 54 lines 1-7) used to store programs that are responsible to operate the power output apparatus.

Regarding claim 15 and 25, Moriya et al shows how the power supply voltage outputted from the power supply is applied to the capacitor via the inverter. Further, it also teaches how the supply voltage is increased to charge said capacitor element.

Regarding claim 18 and 28, Moriya et al discloses charging operation performed by using all three arms of said first inverter or using all three arms of said second inverter (page 4 paragraph 57 lines 29-39).

Regarding claim 19 and 29, by using a first motor coil selected from phase coils (such as coil 24 u-phase) of said first three-phase motor coil and a first arm corresponding to said first motor coil and selected from said three arms (such as inverter 30 arm T12) of said first inverter, or using a second motor coil selected from phase coils (such as coil 24 u-phase) of said second three-phase motor coil and a

second arm corresponding to said second motor coil and selected from said three arms (such as inverter 32 arm T21) of said second inverter the power –supply voltage is increased (page 3 paragraph 55 lines 9-17).

4. Claims 20 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al (Pub No. US 2002/0105300 A1) in view of Kumar et al U.S. Patent No. (6,023,137) further in view of Nitta et al (U.S. 6,203,468).

It is shown above in paragraph 2 how the combination of Moriya et al and Kumar et al invention meets the limitation of claim 14 and 24. However, Moriya et al fails to show a control unit that displays on a display unit an indication that preparations for driving said power output apparatus are completed.

On the other hand, Nitta et al shows a control unit 20 connected to a display 27 where the display shows the charging condition (column 6, lines 12-15).

Thus, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate display 27 into Moriya invention; the motivation being that the display unit will help monitor several functions of the vehicle and improves operator understanding of the present condition of the vehicle.

Allowable Subject Matter

5. Claims 1, 3-13 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

“ a relay disposed between said first and second three-phase coils to selectively supply current to the first and second three-phase coils according to a signal from the control unit, wherein said control unit controls said first and second inverters to allow a voltage step-up operation for increasing a power-supply voltage which is output from said power supply to a predetermined level, as well as a drive operation for driving said 2y motor to be performed after said precharge operation is completed, and said 2Y motor starts and internal combustion engine of the hybrid vehicle.”

Response to Argument

7. Applicant's arguments filed on 08/26/05 is received and entered into record.
8. Rejection of claims 1, and 3-7 under 35 U.S.C. §102 (b) is withdrawn as the applicant argument and amendment has traversed the rejection set in the earlier office action. In view of the amended independent claim 1, the rejections of the independent claims 8-13 are withdrawn. Thus, claims 1-13 are allowed in view of applicant's argument and amendment.
9. Regarding claim rejection of claims 14-15, 18-19, 24-25 and 28-29, the rejection set forth in the earlier office action is maintained. The applicant relied on claim language “further charging the capacitor after the precharging is completed, as recited in the ‘second step’ in the claims.” It is a common knowledge in the art that precharging and charging are similar methods. Precharging is one form of charging. The claims fail to show what makes the precharging step any different from the charging step. Hence,

the examiner has maintained the previous rejection as the argument is not persuasive enough to overcome the above cited deficiency.

10. Although the examiner appreciates applicant's detailed discussion in attempt of traversing the rejection of claim 21-23 and 31-33, the explanation fails to fully overcome the rejection as set-froth in the previous office action. In the august 3, 2005 interview, the applicant representative was made aware of the deficiencies that the examiner was concerned with, which were the basis for the rejection of claim 21-23 and 31-33.

The applicant indicated how the motor generator sum could be zero by using the following formula:

$$0 = PG + PN = (TR1 * \Theta_s) + (TR2 * \Theta_r)$$

The only conditions that could satisfy the above statements are either both sides of the sum are zero or there is a negative torque or revolution of a motor; hence, creating a negative value of PG or PN. Since the first condition, where PG and PN are zero, is the only workable condition in view of a motor operation. The explanation failed to overcome the rejection as set forth in the previous office action and as discussed on the personal interview held on Aug 03, 2005. As such, the rejection is maintained, but rewritten to further clarify the position of the examiner.

11. Applicant's argument and remarks are fully considered based on their merits. The claims are rejected/allowed/objected in view of applicant's argument and amendment.

12. Allowable Subject Matter

13. Claims 16-17 and 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Remarks

14. Thirteen claims are allowed. Four claims objected. Sixteen claims rejected.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias B. Hiruy whose telephone number is 571-272-6105. The examiner can normally be reached on 7AM- 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EH
11/28/2005



DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800